REMARKS

Claims 1-58 were pending; of these, claims 5-14, 29 and 31-43 are withdrawn from consideration as being drawn to a non-elected species. Claims 1-4, 15-18, 20-23, 28 and 44-52 were rejected, while claims 19, 24-27 and 30 are objected to as being dependent upon a rejected base claim (but are indicated as being allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims). The applicants have amended claim 30 above. The applicants request further consideration and re-examination in view of the amendments above and remarks set forth below.

Information Disclosure Statement:

With the applicants' response filed July 1, 2005, the applicants' submitted an information disclosure statement, together with form PTO/SB/08B listing U.S. Provisional Patent Application 60/206,580 to Nemovicher. This Nemovicher provisional application was discussed in the applicants' remarks filed July 1, 2005, regarding claim rejections. In the office action mailed August 8, 2005, the rejections were indicated as overcome, which the applicants gratefully acknowledge. However, the office action mailed on August 8, 2005, did not appear to include a copy of the form PTO/SB/08B with respect to the Nemovicher provisional application with the examiner's initials showing that the Nemovicher provisional application was considered. The applicants pointed this out in the response filed on November 8, 2005 and requested that consideration of the Nemovicher provisional application be made of record in the application file. However, a copy of the form PTO/SB/08B with the examiner's initials showing that the Nemovicher provisional application was considered does not appear to have been included with the office action mailed on February 23, 2006.

Therefore, the applicants respectfully request that a copy of the form PTO/SB/08B with the examiner's initials showing that the Nemovicher provisional application was considered be included in the official file for the application.

Rejections under 35 U.S.C. § 112:

Claims 1-3, 16, 19, 20, 21, 24, 28, 30, 45, 48, 49 and 52 were rejected under 35 U.S.C. § 112, second paragraph, as being indefinite. The applicants have

overcome the rejection by the above amendment to claim 30 and respectfully traverse the rejection as to the other claims, as explained below.

Claims 1, 45, 48, 49 and 52, were rejected as being indefinite for the reason that "it is unclear what is the partnership agreement in the claim." The applicants respectfully traverse the rejection. The Manual of Patent Examining Procedure (MPEP) at Section 2173.02 provides guidance on compliance with the definiteness requirement of 35 U.S.C. § 112. Particularly, the MPEP states that the essential inquiry is whether the claims set out and circumscribe a particular subject matter with a reasonable degree of clarity and particularity and that definiteness of claim language must be analyzed, not in a vacuum, but in light of: (A) the content of the particular application disclosure; (B) the teachings of the prior art; and (C) the claim interpretation that would be given by one possessing the ordinary level of skill in the pertinent art at the time the invention was made. MPEP at Section 2173.02 (Oct. 2005). Thus, the test for definiteness under 35 U.S.C. 112, second paragraph, is whether "those skilled in the art would understand what is claimed when the claim is read in light of the specification." MPEP at Section 2173.03, citing *Orthokinetics, Inc. v. Safety Travel Chairs, Inc.*, 806 F.2d 1565, 1576, 1 USPQ2d 1081, 1088 (Fed. Cir. 1986). Also, in reviewing a claim for compliance with 35 U.S.C. 112, second paragraph, the examiner must consider the claim as a whole to determine whether the claim apprises one of ordinary skill in the art of its scope and, therefore, serves the notice function required by 35 U.S.C. 112, second paragraph, by providing clear warning to others as to what constitutes infringement of the patent. MPEP at Section 2173.03, citing, *Solomon v. Kimberly-Clark Corp.*, 216 F.3d 1372, 1379, 55 USPQ2d 1279, 1283 (Fed. Cir. 2000); *In re Larsen*, No. 01-1092 (Fed. Cir. May 9, 2001).

Turning to claim 1, it uses the terms "partnership" and "agreement." The term "partnership" appears in claim 1 in connection with the step of "forming one or more partnerships among the plurality of computers...". The term "partnership" is used in its ordinary sense, consistent with its dictionary definition, to mean a relationship between individuals or groups that is characterized by mutual cooperation and responsibility. The term "agreement" also appears in claim 1 and is used to further define the relationships between the computers of the one or more partnerships by the recitation that "each computer in a partnership commits under an agreement...". The term "agreement" is also used in its ordinary sense, consistent with its dictionary definition, to mean an arrangement between parties regarding a course of action.

Moreover, the arrangement or agreement is itself clearly recited in claim 1: "each computer in a partnership commits under an agreement to store backup data received from one or more of its backup partners, whereby a first computer in each partnership assumes the task of storing backup data received from one or more other computers in the partnership and one or more of the other computers in the partnership assume the task of storing backup data received from the first computer...". Claims 45, 48, 49 and 52 use the terms "partnership" and "agreement" in a similar manner and each clearly defines the relationships among the computers.

In view of the above, the applicants respectfully submit that the terms "partnership" and "agreement," when considered within the context of claims 1, 45, 48, 49 and 52, each viewed as a whole, are not indefinite.

Claims 1, 45, 48, 49 and 52 were rejected for the reason that there is insufficient antecedent basis for the term "other computers." The applicants respectfully traverse the rejection. The MPEP at Section 2173.05(e) provides guidance on the antecedent basis requirement of 35 U.S.C. § 112:

> A claim is indefinite when it contains words or phrases whose meaning is unclear. The lack of clarity could arise where a claim refers to "said lever" or "the lever," where the claim contains no earlier recitation or limitation of a lever and where it would be unclear as to what element the limitation was making reference. Similarly, if two different levers are recited earlier in the claim, the recitation of "said lever" in the same or subsequent claim would be unclear where it is uncertain which of the two levers was intended. A claim which refers to "said aluminum lever," but recites only "a lever" earlier in the claim, is indefinite because it is uncertain as to the lever to which reference is made. Obviously, however, the failure to provide explicit antecedent basis for terms does not always render a claim indefinite. If the scope of a claim would be reasonably ascertainable by those skilled in the art, then the claim is not indefinite. *Ex parte Porter*, 25 USPQ2d 1144, 1145 (Bd. Pat. App. & Inter. 1992) ("controlled stream of fluid" provided reasonable antecedent basis for "the controlled fluid"). Inherent components of elements recited have antecedent basis in the recitation of the components themselves. For example, the limitation "the outer surface of said sphere" would not require an antecedent recitation that the sphere has an outer surface. See *Bose Corp. v. JBL, Inc.*, 274 F.3d 1354, 1359, 61 USPQ2d 1216, 1218-19 (Fed. Cir 2001) (holding that recitation of "an ellipse" provided antecedent basis for "an ellipse having a major diameter" because "[t]here can be no dispute that mathematically an inherent characteristic of an ellipse is a major diameter").

MPEP at Section 2173.05(e) (Oct. 2005). Taking claim 1 as an example, it recites forming one or more partnerships among a plurality of computers. It also recites a "first computer in each partnership" and "one or more other computers in the partnership." From this, it is clear that each partnership is composed of a "first computer" and "one or more other computers." A person of ordinary skill in the art would easily understand that the "one or more other computers" of each partnership are those computers in the partnership that are not the "first computer." Therefore, claim 1 clearly defines what is meant by "other computers." Claims 45, 48, 49 and 52 use these terms in a similar manner and each clearly defines what is mean by the term "other computers."

In view of the above, the applicants respectfully submit that the use of the term "other computers" in claims 1, 45, 48, 49 and 52, is not indefinite.

Claim 2 was rejected as being indefinite for the reason that "it is unclear what are the potential backup partners." The applicants respectfully traverse the rejection. Claim 2 recites:

> 2. (Original) The method of claim 1, further comprising:
>
> selecting potential backup partners from among the plurality computers based on predetermined criteria.

Figure 5 and page 16, line 16 to page 19, line 30 of the applicants' specification explains in detail how a new backup partner is selected. In summary, a prospective back up partner is found in step 266. In steps 268 and 270, a determination is made as to whether the prospective backup partner is one that satisfies certain criteria. An example of the criteria is geographic separation – in order to avoid data loss due to a localized event such as a power interruption, fire or flood. Another example is system diversity, such as operating system diversity – in order to reduce susceptibility to assaults such as virus attacks. At this point, the backup partner is merely a "potential" backup partner because an agreement has not yet been reached with the potential backup partner to serve as a backup partner. Then, in step 272, the potential backup partner is contacted to negotiate a reciprocal backup agreement. Accordingly, the term "potential" is used in claim 2 in its ordinary sense and consistent with its dictionary definition to essentially mean: capable of being, but not yet in existence.

Therefore, the applicants submit that when claim 2 is read in light of the applicants' specification it is clear what is meant by "potential backup partners."

Claim 2 was also rejected for the reason that "it is unclear what are the predetermined criteria in order to determine any partnership among a plurality of computers." As explained above, the "predetermined criteria" is used to determine whether a backup partner is a suitable "potential" backup partner before a reciprocal backup agreement is formed. Accordingly, the predetermined criteria does not "determine any partnership among a plurality of computers," but instead, is used to determine whether a computer is a suitable potential backup partner. As mentioned above, the criteria may include geographic diversity and/or system diversity.

In view of the above, the applicants respectfully submit that claim 2 is not indefinite.

Claim 3 was rejected as being indefinite for the reason that "it is unclear how to negotiate the agreements between the plurality of computers based on either the predetermined requirements or the backup requirements." The applicants respectfully traverse the rejection. Claim 3 recites:

> 3. (Original) The method of claim 1, further comprising:
>
> negotiating the agreements between the plurality of computers based on predetermined requirements, including backup requirements.

As is explained in the applicants' specification at page 18, line 21 to page 19, line 30, to establish a reciprocal agreement, the computer system negotiates with a chosen potential backup partner by exchanging information. In particular, the potential backup partner is queried about its ability to satisfy additional requirements, such as a predictable and suitable time schedule for being on-line, matching backup requirements, suitable network bandwidth and cooperative backup track record. It is expected that the chosen potential backup partner will have its own similar queries. Accordingly, the agreements are negotiated between the plurality of computers based on these predetermined requirements, as recited in claim 3. Therefore, the applicants respectfully submit that when claim 3 is read in light of the specification, it is not indefinite.

Claim 16 is rejected for the reason that there is insufficient antecedent basis for the term "the backup partners." The applicants respectfully traverse the rejection.

Claim 16 is dependent from claim 1. Claim 1 recites the term "backup partners" in line 5. Accordingly, "the backup partners" recited in claim 16 has antecedent basis in claim 1, at line 5. Therefore, the applicants submit that claim 16 is not indefinite.

Claim 19 was rejected for the reason that there is insufficient antecedent basis for the term "the computer." The applicants respectfully traverse the rejection. Claim 19 recites "the protocol, being performed by any computer of the plurality of computers, includes sending by the computer to a monitored one of its backup partners a hash value of a first random number" (emphasis added). The recited "any computer" is inherently a computer. Accordingly, the term "the computer" has antecedent basis in the term "any computer." Therefore, the applicants submit that claim 19 is not indefinite.

Claim 20 was rejected for the reason that there is insufficient antecedent basis for the term "other computer." The applicants respectfully traverse the rejection. Claim 20 recites "another computer" in line 2, which literally means "an other computer." From this, it can be seen that the term "other computer" has antecedent basis in the term "another computer." Therefore, the applicants submit that claim 20 is not indefinite.

Claim 21 was rejected for the reason that there is insufficient antecedent basis for the term "the new backup partner." The applicants respectfully traverse the rejection. Claim 21 depends from claim 20. Claim 20 recites "a new backup partner" at lines 2-3. Accordingly, the term "the new backup partner" in claim 21 has antecedent basis in the term "a new backup partner" in claim 20. Therefore, the applicants submit that claim 21 is not indefinite.

Claim 24 was rejected as being indefinite for the reason that "it is unclear what are the potential backup partners from among a plurality of computers." The applicants respectfully traverse the rejection. It should be noted that claim 24 depends from claim 3, which depends from claim 2. As explained above in connection with claim 2, figure 5 and page 16, line 16, to page 19, line 30, of the applicants' specification explains in detail how a new backup partner is selected. In summary, a prospective back up partner is found in step 266. In steps 268 and 270, a determination is made as to whether the prospective backup partner is one that satisfies certain criteria. Examples of the criteria include geographic separation and system diversity. At this point, the backup partner is merely a "potential" backup partner because an agreement has not yet been reached with the potential backup

partner to serve as a backup partner. In step 272 the potential backup partner is contacted to negotiate a reciprocal backup agreement. Accordingly, the term "potential" is used in claim 24 in its ordinary sense and consistent with its dictionary definition to essentially mean: capable of being, but not yet in existence. Therefore, the applicants submit that it is clear what is meant by "potential backup partners" as used in claim 24.

Claim 24 was also rejected as being indefinite for the reason that "it is unclear what is a predictable and/or suitable time schedule for being on-line, and/or a suitable network bandwidth." The applicants respectfully traverse the rejection.

Applicants' claim 24 recites as follows:

> 24. (Original) The method of claim 3, wherein negotiating the agreements includes, for any computer of the plurality of computers,
>
> exchanging queries between the computer and computers selected as its potential backup partners about each such computer's ability to satisfy the predetermined requirements that include one or more of
>
> predictable and suitable time schedule for being on-line,
>
> suitable network bandwidth,
>
> matching backup space requirements, and
>
> backup track record.

Further, the MPEP at Section 2173.05(b) provides guidance on the requirements of 35 U.S.C. § 112 with respect relative terminology:

> The fact that claim language, including terms of degree, may not be precise, does not automatically render the claim indefinite under 35 U.S.C. § 112, second paragraph. *Seattle Box Co., v. Industrial Crating & Packing, Inc.*, 731 F.2d 818, 221 USPQ 568 (Fed. Cir. 1984). Acceptability of the claim language depends on whether one of ordinary skill in the art would understand what is claimed, in light of the specification.

MPEP at Section 2173.05(b) (Oct. 2005). Accordingly, one must look to the applicants' specification to determine whether one of ordinary skill in the art would understand what is meant by the terms "predictable" and "suitable" in applicants' claim 24. The applicants' specification at page 18, line 21 to page 19, line 30,

explains that to establish a reciprocal agreement, the computer system negotiates with a chosen potential backup partner by exchanging information. In particular, the chosen potential backup partner is queried about its ability to satisfy additional requirements, such as a predictable and suitable time schedule for being on-line, matching backup requirements, suitable network bandwidth and cooperative backup track record. Regarding the predictable and suitable time period for being on-line, the applicants' specification states that backup partners are assumed to adhere to certain schedules for being on-line and that a computer system prefers to partner with backup partners that, as compared to its schedule, keep a similar or otherwise suitable time schedule for being on-line and for providing back-up services. Applicants' specification at page 18, lines 26-29. From this, a person of ordinary skill in the art would understand that a potential backup partner that is expected to rarely or never available on-line when needed for backup services would not make a suitable backup partner. Conversely, a potential backup partner that is often expected to be on-line when needed could be a suitable backup partner. Thus, a person of ordinary skill in the art would understand what is meant by a predictable and suitable time period for being on-line.

Regarding the suitable network bandwidth requirement, the applicants' specification explains that a computer prefers to partner with a backup partner to which it is connected via a network having a bandwidth that is at least better than a required threshold. Applicants' specification at page 19, lines 1-4. From this, a person of ordinary skill in the art would understand that a potential backup partner to which the computer is connected by a network having a bandwidth that is much lower than the threshold would not make a suitable backup partner. Conversely, a potential backup partner to which the computer is connected by a network having a bandwidth that is at least as great as the threshold could be a suitable backup partner. Therefore, a person of ordinary skill in the art would understand what is meant by a suitable network bandwidth.

In view of the above, the applicants submit that when claim 24 is read in light of the specification it is not indefinite.

Claim 28 was rejected for the reason that there is insufficient antecedent basis for the term "other backup partners." The applicants respectfully traverse the rejection. Claim 28 recites as follows:

28. (Original) The method of claim 1, wherein each of the backup partners has a recent copy of a list of its backup partners' other backup partners.

As is explained in the applicants' specification, each computer may have more than one backup partner. See e.g., applicants' specification at page 9, lines 21-22, and page 20, lines 10-12. Thus, for a particular computer, it may have multiple backup partners. Each of those backup partners may, in turn, have multiple backup partners of their own. When there are multiple of these backup partners, they will inherently include the particular backup partner and one or more "other backup partners." In view of the above, the applicants respectfully submit that the use of the term "other backup partners" in claim 28 is not indefinite.

Claim 30 was rejected for the reason that "it is unclear what is a predetermined commitment period and that is longer than a grace period." The applicants have amended claim 30 to recite that "in each partnership each computer commits to avoid making or honoring a data restoration request for a commitment period that is longer than a grace period...". Therefore, claim 30, itself, makes clear that the "commitment period" is a period of time before the expiration of which a computer will avoid making or honoring a data restoration request. In addition, claim 30 requires that the grace period for a backup partner of a computer starts to run if it is determined that the backup partner has failed to respond to a verification request or has failed to prove that it is retaining the previously backed up data. The grace period expires when the backup partner has continued to fail to respond to a verification request or has failed to prove that it is retaining the previously backed up data so as to be considered to have reneged on its agreement. As is explained in the applicants' specification at page 15, line 15 to page 16, line 15, by making the commitment period longer than the grace period, a computer system will be prevented from freeloading (i.e. benefiting from backup services performed by others while not providing backup services). Therefore, the applicants submit that claim 30 is not indefinite.

In view of the above, the applicants respectfully request that the rejections under 35 U.S.C. § 112 be removed.

Rejections under 35 U.S.C. § 102:

Claims 1-4, 15-18, 20-23, 28 and 44-52 were rejected under 35 U.S.C. § 102(e) as being anticipated by Bhoj et al. (U.S. Patent No. 6,304,892).

The applicants respectfully traverse the rejection. The applicants' claim 1 recites as follows:

> 1. A method for backing up data on a plurality of computers connected via a network, comprising:
>
> forming one or more partnerships among the plurality of computers such that each computer in a partnership commits under an agreement to store backup data received from one or more of its backup partners, whereby a first computer in each partnership assumes the task of storing backup data received from one or more other computers in the partnership and one or more of the other computers in the partnership assume the task of storing backup data received from the first computer;
>
> backing up data in accordance with each agreement; and
>
> periodically verifying that previously backed up data is being retained by the computers committed to act as backup partners in accordance with each agreement.

Thus, claim 1 requires the formation of reciprocal partnerships in which a plurality of computers cooperate to store each other's backup data and in which the commitments are periodically verified. The partnerships are clearly reciprocal (i.e. two-way) because claim 1 recites that "each computer in a partnership commits under an agreement to store backup data received from one or more of its backup partners" (emphasis added). The terms "backup" and "backing up data" will be understood by a person of ordinary skill in the art to mean essentially the copying of data for the purpose of having an additional copy of original data so that if the original data is damaged or lost, the data may be restored from the copy. See Wikipedia, <<en.wikipedia.org/wiki/Data_backup>>.

Bhoj et al. do not suggest or disclose reciprocal partnerships, nor do Bhoj et al. suggest or disclose backing up data as recited by the applicants' claim 1. Instead, Bhoj et al. disclose a service management system in federated system having first and second independently administered data service systems. The service management system includes a service manager that provides selective management data of the second data service system to the first data service system in accordance with a predetermined service level agreement between the first and second data service systems without giving the first data service system complete access to the second data service system. Bhoj et al. also describe a method of selectively providing management data from one independently administered data service system to another independently administered data service system. See Abstract of Bhoj et al.

Bhoj et al. explain that when a data service system which provides Internet or intranet services tries to grow or expand it may be necessary or desirable for the data service system to outsource some of the services it provides, such as web services, to another data service system. Bhoj et al. at col. 1, lines 55-61. Bhoj et al. also explain that because each data service system is independently administered, the system administrator of one control domain is not able to access another control domain to detect problems in that control domain or to measure service performance unless given access to that control domain. Bhoj et al. at col. 2, lines 8-13. Further, giving complete access to a service system may be undesirable as the service system may contain technology or trade secrets that the system administrator does not want to disclose. Bhoj et al. at col. 2, lines 19-24. Therefore, the system of Bhoj et al. allows selected system management information to be shared without allowing external sources to have complete access to the data service system. Bhoj et al. at col. 2, lines 38-44.

To accomplish this, Bhoj et al. teach that service level agreements (SLAs) are used to define agreements among the data service systems 31-33 (Figure 3 of Bhoj et al.) to share resources and to allow each of the data service systems 31-33 to offer service quality guarantees to their respective customers. Bhoj et al. at col. 5, line 65 to col. 6, line 4. The SLAs are written in a humanly recognizable language and include the parties to the agreement, the service objectives of the agreement, the responsibilities of the parties, problem management and penalty clauses. Bhoj et al. at col. 6, lines 22-27. The SLAs are converted into machine readable contract templates and stored in service management systems 31a-33a of the respective data service systems 31-33. Bhoj et al. at col. 6, lines 62-64. The service management systems 31a-33a use the SLAs to control access to the system resources and to monitor the system for compliance with provisions of the SLAs. Bhoj et al. at col. 6, line 64 to col. 7, line 2. The service management systems 31a-33a also allow monitoring and sharing of selective management information across control domain boundaries in a secure way. Bhoj et al. at col. 7, lines 4-7.

The service level agreements (SLAs) disclosed by Bhoj et al. are of a type by which one service system hires another service system to provide services in exchange for payment. In other words, the service agreements of Bhoj et al. involve the provision of services from provider to recipient (i.e. the provision of services is one-way). This is clear from col. 6, lines 51-61 of Bhoj et al. where it is explains that

if the service provider under an agreement does not meet the service guarantees, the service provider will automatically reimburse the customers accordingly by providing free or price-discounted services or by issuing credits toward monetary fees. And, while Bhoj et al. teaches that each service system 31-33 may have an agreement, this simply means that each service system may either deliver services under and agreement or receive services under an agreement. Nowhere do Bhoj et al. teach or suggest that any service agreement involves an exchange of services for services.

In marked contrast to the one-way type of service agreements disclosed by Bhoj et al., applicants' claim 1 requires that each computer in a partnership commits under an agreement to store backup data received from one or more of its backup partners. In other words, claim 1 requires the exchange of services for services among the computers of the partnerships (i.e. the agreements are two-way among the backup partners).

Moreover, applicant's claim 1 requires that the computers exchange promises to back up each other's data. As explained above, backing up data means that the data is copied for the purpose of having an additional copy of original data so that if the original data is damaged or lost, the data may be restored from the copy. Nowhere do Bhoj et al. suggest or disclose backing up data. Rather, as explained above, Bhoj et al. teaches that the service systems exchange management information regarding data services which are Internet or intranet services.

In view of the above, it can be seen that applicants' claim 1 is distinguishable from Bhoj et al. in at least two important respects. However, for anticipation to occur, a prior art reference must teach each and every element of the claim. See MPEP at Section 2131 (Oct. 2005). Therefore, claim 1 is allowable over Bhoj et al. because Bhoj et al. do not teach all of its limitations. Claims 2-44 and 53-55 are allowable at least because they depend from an allowable base claim 1.

Applicants' claim 45 recites as follows:

> 45. (Previously Presented) A distributed cooperative backup system, comprising:
>
> a network; and
>
> a loose confederation of computers connected via the network, a plurality of computers from among the loose confederation of computers being configured for distributed cooperative backing up of data, each computer of

the plurality of computers having a storage that can be used for providing reciprocal backup services, and each computer of the plurality of computers respectively having a computer readable medium embodying computer program code configured to cause the computer to

form partnerships between the plurality of computers, each of the partnerships being of computers such that each computer in a partnership commits under an agreement to store backup data received from one or more of its backup partners, whereby a first computer in each partnership assumes the task of storing backup data received from one or more other computers in the partnership and one or more of the other computers in the partnership assume the task of storing backup data received from the first computer;

back up data in accordance with each agreement; and

periodically verify that previously backed up data is being retained by the computers committed to act as backup partners in accordance with each agreement.

Therefore, similarly to claim 1, claim 45 requires the formation of reciprocal partnerships in which a plurality of computers cooperate to store each other's backup data and in which the commitments are periodically verified. The partnerships are clearly reciprocal (i.e. two-way) because claim 45 recites that "each computer in a partnership commits under an agreement to store backup data received from one or more of its backup partners" (emphasis added). In addition, applicant's claim 45 requires that the computers exchange promises to back up each other's data. As explained above, backing up data means that the data is copied for the purpose of having an additional copy of original data so that if the original data is damaged or lost, the data may be restored from the copy. And, as explained above, Bhoj et al. do not teach or suggest either of these features. For at least these reasons, claim 45 is allowable over Bhoj et al. Claims 46-47 are allowable at least because they depend from an allowable base claim 45.

Applicants' claim 48 recites as follows:

48. (Previously Presented) A distributed cooperative backup system, comprising:

a network; and

a loose confederation of computers connected via the network, a plurality of computers from among the loose confederation of computers being configured for distributed cooperative backing up of data and functioning as backup partners, each computer of the plurality of computers having a storage that can be used for providing reciprocal backup services, and each computer of the plurality of computers respectively having a computer readable medium embodying computer program code configured to cause the computer to

select computers as potential backup partners from among the plurality of computers based on predetermined criteria,

negotiate a reciprocal backup partnership agreement between the computer and the selected computers based on predetermined requirements, including backup requirements,

form partnerships between the computer and selected computers, the computer and the selected computers becoming backup partners by agreeing to cooperatively provide backup services to each other such that a first computer in each partnership assumes the task of storing backup data received from one or more other computers in the partnership and one or more of the other computers in the partnership assume the task of storing backup data received from the first computer and so that a distributed cooperative backing up of data is administered in the absence of central control,

periodically back up data at the backup partners, encoding the data each time before the data is backed up, and

periodically verify that previously backed up data is retained by the backup partners.

Therefore, similarly to claims 1 and 45, discussed above, claim 48 requires the formation of reciprocal partnerships in which a plurality of computers cooperate to store each other's backup data and in which the commitments are periodically verified. The partnerships are clearly reciprocal (i.e. two-way) because claim 48 recites that "a first computer in each partnership assumes the task of storing backup data received from one or more other computers in the partnership and one or more of the other computers in the partnership assume the task of storing backup data received from the first computer." In addition, applicant's claim 48 requires that the computers exchange promises to back up each other's data. As explained above, backing up data

means that the data is copied for the purpose of having an additional copy of original data so that if the original data is damaged or lost, the data may be restored from the copy. And, as explained above, Bhoj et al. do not teach or suggest either of these features. For at least these reasons, claim 48 is allowable over Bhoj et al.

Applicants' claim 49 recites as follows:

> 49. (Previously Presented) A method for backing up data on a plurality of computers connected via a network, comprising:
>
> exchanging messages among computers of the plurality to determine the ability of each to satisfy backup storage requirements of one or more others;
>
> forming a partnership among computers of the plurality in which a first computer in the partnership stores backup data received from one or more other computers in the partnership and one or more of the other computers in the partnership store backup data received from the first computer; and
>
> each of the computers in the partnership periodically verifying that its backup data is being retained by one or more of the other computers in the partnership.

Therefore, similarly to the other claims discussed above, claim 49 requires the formation of reciprocal partnerships in which a plurality of computers cooperate to store each other's backup data and in which the commitments are periodically verified. The partnerships are clearly reciprocal (i.e. two-way) because claim 52 recites that "a first computer in the partnership stores backup data received from one or more other computers in the partnership and one or more of the other computers in the partnership store backup data received from the first computer." In addition, applicant's claim 49 requires that the computers exchange promises to backup each other's data. As explained above, backing up data means that the data is copied for the purpose of having an additional copy of original data so that if the original data is damaged or lost, the data may be restored from the copy. And, as explained above, Bhoj et al. do not teach or suggest either of these features. For at least these reasons, claim 49 is allowable over Bhoj et al. Claims 50, 51 and 56-58 are allowable at least because they depend from an allowable base claim 49.

Applicants' claim 52 recites as follows:

52. (Previously Presented) Computer readable media having stored thereon computer code for a method of backing up data on a plurality of computers connected via a network, the method comprising steps of:

exchanging messages among computers of the plurality to determine the ability of each to satisfy backup storage requirements of one or more others;

forming a partnership among computers of the plurality in which a first computer in the partnership stores backup data received from one or more other computers in the partnership and one or more of the other computers in the partnership store backup data received from the first computer; and

periodically verifying that stored backup data is being retained by one or more of the computers in the partnership.

Therefore, similarly to the other claims discussed above, claim 52 requires the formation of reciprocal partnerships in which a plurality of computers cooperate to store each other's backup data and in which the commitments are periodically verified. The partnerships are clearly reciprocal (i.e. two-way) because claim 52 recites that "a first computer in the partnership stores backup data received from one or more other computers in the partnership and one or more of the other computers in the partnership store backup data received from the first computer." In addition, applicant's claim 52 requires that the computers exchange promises to backup each other's data. As explained above, backing up data means that the data is copied for the purpose of having an additional copy of original data so that if the original data is damaged or lost, the data may be restored from the copy. And, as explained above, Bhoj et al. do not teach or suggest either of these features. For at least these reasons, claim 52 is allowable over Bhoj et al.

Morever, applicants' rejected claims recite additional limitations not taught or suggested by Bhoj et al. For example, claims 3 and 48 recite the use of backup requirements. Because Bhoj et al. do not teach or suggest backing up data, Bhoj et al. also do not teach or suggest the use of backup requirements. Also, claim 4 recites distributed cooperative backing up of data in the absence of central control. Because Bhoj et al. do not teach or suggest backing up data, Bhoj et al. also do not teach or suggest distributed cooperative backing up of data in the absence of central control.

Claim 15 recites identifying data previously backed up that no longer needs to be backed up. Because Bhoj et al. do not teach or suggest backing up data, Bhoj et al. also do not teach or suggest identifying data previously backed up that no longer needs to be backed up. Claims 16-18, 47 and 50 recite features for verifying that previously backed up data is retained by the backup partners. Because Bhoj et al. do not teach or suggest backing up data, Bhoj et al. also do not teach or suggest verifying that previously backed up data is retained by the backup partners.

Further, claims 20-22 recite features relating to a determination that a backup partner has reneged by not retaining previously backed up data. Because Bhoj et al. do not teach or suggest backing up data, Bhoj et al. also do not teach or suggest a determination that a backup partner has reneged by not retaining previously backed up data. In addition, claim 21 recites searching for another computer based on predetermined criteria including one or both of geographic separation and system diversity. The office action mailed on February 23, 2006 states that Bhoj et al. inherently teaches the all of the limitations of claim 21. However, to properly reject a claim on grounds of inherency, the extrinsic evidence must make clear that the missing descriptive matter is necessarily present in the thing described in the reference, and that it would be so recognized by persons of ordinary skill. MPEP at Section 2112. Here, the office action simply states of claim 21: "it is inherent part of the business method of outsourcing agreements and/or contracts." The applicants disagree. As explained in the applicants' specification, at page 16, line 16 to page 19, line 30, a determination is made as to whether a prospective backup partner is one that satisfies certain criteria. An example of the criteria is geographic separation – in order to avoid data loss due to a localized event such as a power interruption, fire or flood. Another example is system diversity, such as operating system diversity – in order to reduce susceptibility to assaults such as virus attacks. The applicants respectfully submit that Bhoj et al. do not explicitly or inherently teach such features.

Also, claims 54 and 57 recite that at least one computer of the plurality assumes the task of storing backup data received from at least two other computers and claims 55 and 58 recite that different portions of data of at least one computer of the plurality are stored by at least two other computers. Because Bhoj et al. do not teach or suggest backing up data, Bhoj et al. also do not teach or suggest these features relating to backing up of data.

The applicants' respectfully submit that these additional features of the applicants' claims which are not taught or suggested by Bhoj et al. provide additional reasons why these claims are allowable over Bhoj et al.

Conclusion:

In view of the above, the applicants submit that all of the rejected claims are allowable. Allowance at an early date would be greatly appreciated. Should any outstanding issues remain, the examiner is encouraged to contact the undersigned at (408) 293-9000 so that any such issues can be expeditiously resolved.

Respectfully Submitted,

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